

Claims

1. A method including

receiving a user request for an object at a server;

performing an operation on data associated with said object at a cluster de-

vice, said operation including accessing said object at said server; and

conditionally allowing access to said object in response to said user request

and a result of said operation.

2. A method as in claim 1, including conditioning said operation on a

feature of said object, said feature including at least one of: a file name, a file type, a file-

system share.

3. A method as in claim 1, including conditioning said operation on an

intersection of

a feature of said object, said feature including at least one of: a file name, a

file type, a filesystem share; and

a type of access associated with said user request;

wherein said operation is performed for an intersection of at least one said

feature and at least one type of access.

1 4. A method as in claim 1, including persistently recording a result of
2 said operation in association with said object.

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4 5. A method as in claim 1, including selecting said cluster device to
5 perform said operation in response to a priority class associated with said cluster device.

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7 6. A method as in claim 1, wherein said operation includes a plurality
8 of processes, each one process being performed at a separate cluster device.

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10 7. A method as in claim 1, wherein said operation includes at least one
11 of: virus scanning, encryption or decryption, compression or decompression.

12
13 8. A method as in claim 1, wherein said operation includes
14 setting a timeout at said server;
15 resetting said timeout in response to receiving a response from said cluster
16 device to a protocol message asking if said cluster device is still working on said opera-
17 tion; and
18 determining that said operation is successful in response to receiving a re-
19 sponse from said cluster device before said timeout expires.

1 9. A method as in claim 1, including assigning an access type to said
2 cluster device, said access type allowing said cluster device to perform said operation
3 notwithstanding user locks associated with said object.

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5 10. A method as in claim 9, including restricting said access type in re-
6 sponse to at least one of: a selected set of network addresses for said cluster device, a se-
7 lected set of domain names for said cluster device, a selected set of user names at said
8 cluster device, a selected set of interfaces between said server and said cluster device.

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10 11. A method as in claim 1, including
11 at a first time, recording a result of said operation for said object; and
12 at a second time, conditioning said operation on said result.

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14 12. A method as in claim 11, wherein said result includes at least one of:
15 a time when said operation was performed, remedial measures taken in response to said
16 operation, whether access was allowed in response to said operation.

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18 13. A method as in claim 1, including conditioning said operation on a
19 type of access associated with said user request.

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21 14. A method as in claim 13, wherein said operation is performed before
22 allowing access to said object for requests including read access.

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2 15. A method as in claim 13, wherein said operation is performed after
3 allowing access to said object for requests including write access.
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5 16. Apparatus including
6 a server having a set of objects and a network interface;
7 a user request for at least one requested one of said objects;
8 a cluster device;
9 a first message from said server to said cluster device, said first message
10 indicating said requested one object;
11 a second message from said cluster device to said server, said second mes-
12 sage indicating a result of an operation performed on said requested one object; and
13 a response to said user request, said response including conditional access
14 to said object in response to said second message.
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16 17. Apparatus as in claim 16, wherein said first message is responsive to
17 a feature of said object, said feature including at least one of: a file name, a file type, a
18 filesystem share.
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20 18. A method as in claim 16, wherein said first message is responsive to
21 an intersection of

1 a feature of said object, said feature including at least one of: a file name, a
2 file type, a filesystem share; and
3 a type of access associated with said user request.
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5 19. Apparatus as in claim 16, wherein said first message is directed at a
6 selected said cluster device in response to a priority class associated with said cluster de-
7 vice.
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9 20. Apparatus as in claim 16, including a plurality of said first messages
10 directed at separate said cluster devices in response to a single said user request.
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12 21. Apparatus as in claim 16, wherein said second message includes a
13 result of at least one of: virus scanning, encryption or decryption, compression or decom-
14 pression.
15

16 22. Apparatus as in claim 16, including a persistent record of at least
17 some information responsive to said second message, said persistent record being associ-
18 ated with said object.
19

20 23. Apparatus as in claim 22, wherein said persistent record includes at
21 least one of: a time when said second message was received, remedial measures taken by

1 said cluster device in response to said first message, whether access was allowed in re-
2 sponse to said user request.

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4 24. Apparatus as in claim 16, wherein said conditional access is respon-
5 sive to a type of access associated with said user request.

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7 25. Apparatus as in claim 24, wherein said second message is received
8 before allowing access to said object for user requests including read access.

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10 26. Apparatus as in claim 24, wherein said first message is sent after al-
11 lowing access to said object for user requests including write access.

12
13 27. Memory or mass storage including instructions interpretable by a
14 computing device, said instructions directing said computing device to
15 receive a user request for an object at a server;
16 perform an operation on data associated with said object at a cluster device,
17 said operation including accessing said object at said server; and
18 conditionally allow access to said object in response to said user request and
19 a result of said operation.

1 28. Memory or mass storage as in claim 27, including instructions di-
2 recting said computing device to condition said operation on a feature of said object, said
3 feature including at least one of: a file name, a file type, a filesystem share.

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5 29. Memory or mass storage as in claim 27, including instructions di-
6 recting said computing device to condition said operation on an intersection of
7 a feature of said object, said feature including at least one of: a file name, a
8 file type, a filesystem share; and

9 a type of access associated with said user request;
10 wherein said operation is performed for an intersection of at least one said
11 feature and at least one type of access.

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13 30. Memory or mass storage as in claim 27, including instructions di-
14 recting said computing device to persistently record a result of said operation in associa-
15 tion with said object.

16
17 31. Memory or mass storage as in claim 27, including instructions di-
18 recting said computing device to select said cluster device to perform said operation in
19 response to a priority class associated with said cluster device.

1 32. Memory or mass storage as in claim 27, wherein said operation in-
2 cludes a plurality of processes, each one process being performed at a separate cluster de-
3 vice.

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5 33. Memory or mass storage as in claim 27, wherein said operation in-
6 cludes at least one of: virus scanning, encryption or decryption, compression or decom-
7 pression.

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9 34. Memory or mass storage as in claim 27, wherein said operation in-
10 cludes

11 setting a timeout at said server;

12 resetting said timeout in response to receiving a response from said cluster
13 device to a protocol message asking if said cluster device is still working on said opera-
14 tion; and

15 determining that said operation is successful in response to receiving a re-
16 sponse from said cluster device before said timeout expires.

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18 35. Memory or mass storage as in claim 27, including instructions di-
19 recting said computing device to assign ing an access type to said cluster device, said ac-
20 cess type allowing said cluster device to perform said operation notwithstanding user
21 locks associated with said object.

1 36. Memory or mass storage as in claim 35, including instructions di-
2 recting said computing device to restrict said access type in response to at least one of: a
3 selected set of network addresses for said cluster device, a selected set of domain names
4 for said cluster device, a selected set of user names at said cluster device, a selected set of
5 interfaces between said server and said cluster device.

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7 37. Memory or mass storage as in claim 27, including instructions di-
8 recting said computing device to

9 at a first time, record a result of said operation for said object; and
10 at a second time, condition said operation on said result.

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12 38. Memory or mass storage as in claim 37, wherein said result includes
13 at least one of: a time when said operation was performed, remedial measures taken in
14 response to said operation, whether access was allowed in response to said operation.

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16 39. Memory or mass storage as in claim 27, including instructions di-
17 recting said computing device to condition said operation on a type of access associated
18 with said user request.

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20 40. Memory or mass storage as in claim 39, wherein said operation is
21 performed before allowing access to said object for requests including read access.

- 1 41. Memory or mass storage as in claim 39, wherein said operation is
- 2 performed after allowing access to said object for requests including write access.